IV-12-1 Introduction

In the urban context, most people think of vegetation as street trees. While street trees make the biggest visual and possibly environmental impacts, there are many other types of vegetation which have a place in the urban environment. Depending on the context, planting strips may contain grasses, ground covers, shrubs, or trees. Some communities are exploring the option of employing planting strips and medians as storm water treatment facilities. In this case, vegetation plays an important role in filtering, holding, and transpiring water.

Figure IV-12.1 – Planted Median and Roadside Street Tree

(Source: SR 516, Covington, WA)

IV-12-2 Definitions

IV-12-3 Design Purpose and Need

Roadside vegetation performs many functions. In addition to the stormwater benefits listed above, roadside vegetation traps airborne particulate pollutants, absorb CO_2, produce oxygen, screens head light glare and on coming traffic, softens the urban hardscape, adds human scale, and is aesthetically pleasing. Research has shown that street trees in business districts may make shoppers stay longer and spend more.

Figure IV-12.2 – Roadside Vegetation

(Source: Olympia, WA)

However, installing and maintaining vegetation in urban areas is not inexpensive. Usually planting areas in urban areas require special soil mixes, adequate drainage, and irrigation. The community must also be prepared to take on the long term maintenance of these areas to maintain plant health and keep sidewalks and streets free from leaves.

Further information on the functions and benefits of vegetation can be found in the Chapter 800 of the *Roadside Manual.* More information on planting design and establishment can be found in Chapters 800 and 810 of the *Roadside Manual.* See also Chapter 2.k.i Designing for Green Streets for a detailed discussion of urban forests.

IV-12-4 Balancing Considerations

There are numerous factors to consider when looking to include vegetation in a transportation plan. Several of the issues relating to vegetation are listed below. To be safe, effective, and beneficial to the community and environment in the long run, there must be careful consideration of the factors, and weighing of the benefits and drawbacks to arrive at a desirable solution.

- ✓ Catches and retains rainfall and lessens runoff, captures particulate pollutants, and creates oxygen
- ✓ Street trees add shade
- ✓ Irrigation usually necessary for proper plant health
- ✓ Maintenance required annually to pick up leaf litter
- ✓ Occasional maintenance, such as pruning and fertilizing, required for long term plant health

- ✓ Increases value of adjacent real estate
- ✓ Can be an impact hazard if improperly sited
- ✓ Can block site distance if not properly maintained
- ✓ Can damage sidewalks and paving in the long run. Using structural soils and proper sub-base design can alleviate this problem.

IV-12-5 Analysis Method

The first point of determining if the project will include revegetation is to determine if there is enough room for planting. Next determine the soil and water requirements for the planting areas. Structural soils can be used under pavements to allow plant roots to move into these areas while maintaining the structural integrity of the pavement. Irrigation is usually required in urban planting situations because of the reduced impervious surfaces and lack of ground water. Plant species should be chosen to match the context, design intention, and existing or proposed resources. Consult with the region or headquarters Landscape Architect for assistance with the analysis and design process.

IV-12-6 Governing Regulations and Directional Documents

Design Manual, WSDOT, M 22-01.

Roadside Classification Plan, WSDOT, M 25-31.

Roadside Manual, WSDOT, M 25-30.

Urban Funding Matrix

The *Roadside Classification Plan* (RCP) sets the policy for roadside vegetation for WSDOT. The RCP has treatment levels that outline acceptable types and sizes of plants in urban and semi-urban situations. If the designer chooses to work outside of these guidelines the State Design Engineer must approve it. If the local agency desires or requires treatments above this level the project office should negotiate with the them to obtain the additional costs from outside WSDOT funding sources.

IV-12-7 Additional Resources

Landscape Architecture, Region or Headquarters Landscape Architect.